



## Pulse Proof, Sulfur Resistant Thick Film Chip Resistor



### KEY BENEFITS

- High pulse performance
- Advanced sulfur resistance
- AEC-Q200 qualified

### APPLICATIONS

- High and repetitive pulse loading
- HID headlight charge and discharge
- Lighting power supplies
- Medical equipment

### RESOURCES

- Datasheet: RCA-IF - [www.vishay.com/doc?20059](http://www.vishay.com/doc?20059)
- For technical questions contact [thickfilmchip@vishay.com](mailto:thickfilmchip@vishay.com)
- Material categorization: For definitions please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



# THICK FILM CHIP RESISTORS

RCA-IF

## Pulse Proof, Sulfur Resistant Thick Film Chip Resistor

STANDARD ELECTRICAL SPECIFICATIONS								
MODEL	CASE SIZE INCH	CASE SIZE METRIC	POWER RATING $P_{70^{\circ}\text{C}}$ W	LIMITING ELEMENT VOLTAGE $U_{\text{max}}$ AC/DC V	TEMPERATURE COEFFICIENT ppm/K	TOLERANCE %	RESISTANCE RANGE $\Omega$	SERIES
RCA0402-IF e3	0402	RR1005M	0.063	50	$\pm 200$	$\pm 5, \pm 10$	1.0 to 100K	E24
RCA0603-IF e3	0606	RR1608M	0.1	75	$\pm 200$	$\pm 5, \pm 10$	1.0 to 100K	E24
RCA0805-IF e3	0805	RR2012M	0.125	150	$\pm 200$	$\pm 5, \pm 10$	1.0 to 100K	E24
RCA1206-IF e3	1206	RR3216M	0.25	200	$\pm 200$	$\pm 5, \pm 10$	1.0 to 100K	E24
RCA1210-IF e3	1210	RR3225M	0.5	200	$\pm 200$	$\pm 5, \pm 10$	1.0 to 100K	E24
RCA2010-IF e3	2010	RR5025M	0.75	400	$\pm 200$	$\pm 5, \pm 10$	1.0 to 100K	E24
RCA2512-IF e3	2512	RR6332M	1.0	500	$\pm 200$	$\pm 5, \pm 10$	1.0 to 100K	E24

**Notes**

- These resistors do not feature a limited lifetime when operated within the limits of rated dissipation, permissible operating voltage and permissible film temperature. However, the resistance typically increases due to the resistor's film temperature over operating time, generally known as drift. The drift may exceed the stability requirements of an individual application circuit and thereby limits the functional lifetime.
- Power rating depends on the max. temperature at the solder point, the component placement density and the substrate material.

TECHNICAL SPECIFICATIONS								
PARAMETER	UNIT	RCA0402-IF	RCA0603-IF	RCA0805-IF	RCA1206-IF	RCA1210-IF	RCA2010-IF	RCA2512-IF
Rated dissipation $P_{70}$ <sup>(1)</sup>	W	0.063	0.1	0.125	0.25	0.5	0.75	1.0
Limiting element voltage $U_{\text{max}}$ AC <sub>RMS</sub> /DC	V	50	75	150	200	200	400	500
Insulation voltage $U_{\text{ins}}$ (1 min)	V	75	100	200	300	300	300	300
Insulation resistance	$\Omega$	$> 10^9$						
Operating temperature range	$^{\circ}\text{C}$	-55 to +155						
Mass	mg	0.65	2	5.5	10	16	25.5	40.5

**Note**

- <sup>(1)</sup> The power dissipation on the resistors generates a temperature rise against the local ambient, depending on the heat flow support of the printed-circuit board (thermal resistance). The rated dissipation applies only if the permitted film temperature is not exceeded.

### DIMENSIONS in millimeters



SIZE		DIMENSIONS					RECOMMENDED SOLDER PAD DIMENSIONS					
							REFLOW SOLDERING			WAVE SOLDERING		
IMPERIAL	METRIC	L	W	H	T1	T2	a	b	l	a	b	l
0402	RR1005M	$1.0 \pm 0.05$	$0.5 \pm 0.05$	$0.35 \pm 0.05$	$0.25 \pm 0.05$	$0.2 \pm 0.1$	0.4	0.6	0.5			
0603	RR1608M	$1.55^{+0.10}_{-0.05}$	$0.85 \pm 0.1$	$0.45 \pm 0.05$	$0.3 \pm 0.2$	$0.3 \pm 0.2$	0.5	0.9	1.0	0.9	0.9	1.0
0805	RR2012M	$2.0^{+0.20}_{-0.10}$	$1.25 \pm 0.15$	$0.45 \pm 0.05$	$0.3^{+0.20}_{-0.10}$	$0.3 \pm 0.2$	0.7	1.3	1.2	0.9	1.3	1.3
1206	RR3216M	$3.2^{+0.10}_{-0.20}$	$1.6 \pm 0.15$	$0.55 \pm 0.05$	$0.45 \pm 0.2$	$0.4 \pm 0.2$	0.9	1.7	2.0	1.1	1.7	2.3
1210	RR3225M	$3.2 \pm 0.2$	$2.5 \pm 0.2$	$0.55 \pm 0.05$	$0.45 \pm 0.2$	$0.4 \pm 0.2$	0.9	2.5	2.0	1.1	2.5	2.2
2010	RR5025M	$5.0 \pm 0.15$	$2.5 \pm 0.15$	$0.6 \pm 0.1$	$0.6 \pm 0.2$	$0.6 \pm 0.2$	1.0	2.5	3.9	1.2	2.5	3.9
2512	RR6332M	$6.3 \pm 0.2$	$3.15 \pm 0.15$	$0.6 \pm 0.1$	$0.6 \pm 0.2$	$0.6 \pm 0.2$	1.0	3.2	5.2	1.2	3.2	5.2

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